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S/N 09/945,500PATENTIN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Leonard Forbes

Examiner:

Serial No.: 09/945,500

Group Art Unit: 2818

Filed: August 30, 2001

Docket: 1303.029US1

Title: PROGRAMMABLE MEMORY ADDRESS AND DECODE CIRCUITS WITH
LOW TUNNEL BARRIER INTERPOLY INSULATORSINFORMATION DISCLOSURE STATEMENTAssistant Commissioner for Patents
Washington, D.C. 20231

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq.*, the enclosed materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicant respectfully requests that this Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicant requests that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicant with the next official communication.

Pursuant to 37 C.F.R. § 1.97(b), it is believed that no fee or statement is required with the Information Disclosure Statement. However, if an Office Action on the merits has been mailed, the Commissioner is hereby authorized to charge the required fees to Account No. 19-0743 in order to have this Information Disclosure Statement considered.

The Examiner is invited to contact the Applicant's Representative at the below-listed telephone number if there are any questions regarding this communication.

Respectfully submitted,

LEONARD FORBES

By his Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. Box 2938
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(612) 373-6943

Date

7/19/2002

By

Edward J. Brooks, III
Reg. No. 40,925

CERTIFICATE UNDER 37 CFR 1.3: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, Washington, D.C. 20231, on this 23 day of July, 2002.

Gina M. Uphu:

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Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
 STATEMENT BY APPLICANT**
 (Use as many sheets as necessary)

Sheet 1 of 2

Complete if Known

Application Number	09/945500
Filing Date	August 30, 2001
First Named Inventor	Forbes, Leonard
Group Art Unit	Unknown
Examiner Name	Unknown
Attorney Docket No:	01303.029US1

US PATENT DOCUMENTS

Examiner Initial *	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	Filing Date if Appropriate
	US-4412902	11/01/1983	Michikami, Osamu , et al	204	192	06/18/1982
	US-4780424	10/25/1988	Holler, Mark A	437	29	09/28/1987
	US-5350738	09/27/1994	Hase, Takashi , et al	505	473	11/27/1992
	US-5691230	11/25/1997	Forbes, L	437	62	09/04/1996
	US-5801401	09/01/1998	Forbes, L	257	77	01/29/1997
	US-5852306	12/22/1998	Forbes, Leonard	257	315	01/29/1997
	US-5981350	11/09/1999	Geusic, J. E., et al	438	388	05/29/1998
	US-5991225	11/23/1999	Forbes, L., et al	365	230.06	02/27/1998
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Examiner Initials*	Foreign Document No	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	T ²
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OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Class No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		ARYA, S., "Conduction Properties of Thin Al ₂ O ₃ Films", <u>Thin Solid Films</u> , 91 , (1982), pp. 363-374	
		DIPERT, B., "Flash Memory Goes Mainstream", <u>IEEE Spectrum</u> , 30 , (October 1993), 48-52	
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		ELDRIDGE, J., "Measurement of Tunnel Current Density in a Metal-Oxide-Metal System as a Function of Oxide Thickness", <u>Proc. 12th Intern. Conf. on Low Temperature Physics</u> , (1971), pp. 427-428	
		GREINER, J.G., "Josephson Tunneling Barriers by rf Sputter Etching in an Oxygen Plasma", <u>Journal of Applied Physics</u> , vol. 42 , no. 12 , (November 1971), 5151-5155	
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		GRIMBOLT, J., "I. Interaction of Al Films with O ₂ at Low Pressures", <u>Journal of the Electrochemical Society</u> , 129 (10), (1982), pp. 2366-2368	
		GRIMBOLT, J., "II. Oxidation of Al Films", <u>Journal of Electrochem Soc.: Solid-State Science and Technology</u> , (1982), pp. 2369-2372	
		GUNDLACH, K., "Logarithmic Conductivity of Al-Al ₂ O ₃ -Al Tunneling Junctions	

EXAMINER

DATE CONSIDERED

Substitute Disclosure Statement Form (PTD-1449)
 * EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 008. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional) is Applicant to place a check mark here if English language Translation is attached.

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**INFORMATION DISCLOSURE
 STATEMENT BY APPLICANT**

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Complete if Known

Application Number	09/945500
Filing Date	August 30, 2001
First Named Inventor	Forbes, Leonard
Group Art Unit	Unknown
Examiner Name	Unknown

Sheet 2 of 2

Attorney Docket No: 01303.029US1

OTHER DOCUMENTS – NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Produced by Plasma and by Thermal Oxidation", <u>Surface Science</u> , 27, (1971), pp. 125-141	
		HODGES, D.A., <u>Analysis and Design of Digital Integrated Circuits</u> , 2nd Edition, McGraw-Hill Publishing, New York, (1988), pp. 354-357	
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		KUBASCHEWSKI, O., <u>Oxidation of Metals and Alloys</u> , Butterworths, London, (1962), pp. 53-63	
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		POLLACK, S., "Tunneling Through Gaseous Oxidized Films of Al2O3", <u>Transactions of the Metallurgical Society of AIME</u> , 233, (1965), pp. 497-501	
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		SZE, S., <u>Physics of Semiconductor Devices</u> , Second Edition, John Wiley & Sons, New York, (1981), pp. 553-556	

EXAMINER

DATE CONSIDERED

Substitute Disclosure Statement Form (PTO-1449)

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached

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In re Patent Application of: Leonard Forbes

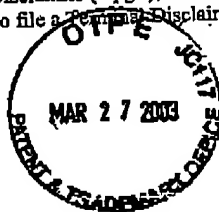
Title: PROGRAMMABLE MEMORY ADDRESS AND DECODE CIRCUITS WITH
LOW TUNNEL BARRIER INTERPOLY INSULATORS

Filing Date: August 30, 2001

Serial No.: 09/945,500

Receipt is hereby acknowledged for the following in the United States Patent and
Trademark Office:

CONTENTS: An Amendment and Response (14 Pages); a Supplemental Information
Disclosure Statement (1 pg.), Form 1449 (3 pgs.), and copies of 59 cited documents; a check
in the amount of \$180.00 to cover the fee for consideration of Information Disclosure
Statement under 97(c); Terminal Disclaimer (3 pgs.); A check in the amount of \$110.00
which represents the fee required to file a Terminal Disclaimer; a Return Postcard and
TRANSMITTAL SHEET.

Mailed: March 24, 2003
TBC/ajmDocket No.: 1303.029US1
Due Date: March 24, 2003

(8)

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S/N 09/945500PATENTIN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Leonard Forbes	Examiner:	Ly D. Pham
Serial No.:	09/945500	Group Art Unit:	2818
Filed:	August 30, 2001	Docket:	1303.029US1
Title:	PROGRAMMABLE MEMORY ADDRESS AND DECODE CIRCUITS WITH LOW TUNNEL BARRIER INTERPOLY INSULATORS		

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENTAssistant Commissioner for Patents
Washington, D.C. 20231

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq.*, the enclosed materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicant respectfully requests that this Supplemental Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicant requests that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicant with the next official communication.

Pursuant to 37 C.F.R. § 1.97(c)(2), Applicants have included the fee of \$180.00 as set forth in 37 C.F.R. § 1.17(p). Please charge any additional fees or credit any overpayment to Account No. 19-0743.

The Examiner is invited to contact the Applicant's Representative at the below-listed telephone number if there are any questions regarding this communication.

Respectfully submitted,

LEONARD FORBES

By his Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. Box 2938
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(612) 373-6960Date 24 March 2003By [Signature]
Timothy B. Clise
Reg. No. 40,557

CERTIFICATE UNDER 37 C.F.R. 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, Washington, D.C. 20231, on this day of March, 2003.

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Amy Moriarty

Signature

[Signature]

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INFORMATION DISCLOSURE
STATEMENT BY APPLICANT
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Application Number	09/945500
Filing Date	August 30, 2001
First Named Inventor	Forbes, Leonard
Group Art Unit	2818
Examiner Name	Pham, Ly

Sheet 1 of 3

Attorney Docket No: 1303.029US1

US PATENT DOCUMENTS

Examiner Initial *	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	Filing Date if Appropriate
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	US-2002/0106536	08/08/2002	Lee, Jongho, et al.	428	702	02/02/2001
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	US-4,757,360	07/12/1988	Faraone, Lorenzo, et al.	257	317	07/06/1983
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	US-5,600,592	02/04/1997	Atsumi, S., et al.	365	185.18	05/08/1995
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DATE CONSIDERED

Substitute Disclosure Statement Form (PTO-1449)
 * EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 802. Draw the design citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional) Applicant is to place a check mark here if English language Translation is attached

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STATEMENT BY APPLICANT

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Sheet 2 of 3

Complete if Known

Application Number	09/945500
Filing Date	August 30, 2001
First Named Inventor	Forbes, Leonard
Group Art Unit	2818
Examiner Name	Pham, Ly
Attorney Docket No:	1303.029US1

US-6,143,638	11/07/2000	Forbes, L., et al.	438	587	08/20/1998
US-6,163,049	12/19/2000	Bui, N. D.	257	321	10/13/1998
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FOREIGN PATENT DOCUMENTS

Examiner Initials ^a	Foreign Document No	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	T ^a
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OTHER DOCUMENTS – NON PATENT LITERATURE DOCUMENTS

Examiner Initials ^a	Cite No ^a	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ^a
		AFANAS'EV, V., et al., "Electron energy barriers between (100)Si and ultrathin stacks of SiO ₂ , Al ₂ O ₃ , and ZrO ₃ and ZrO ₂ insulators", <u>Applied Physics Letters</u> , 78(20), (2001), pp. 3073-3075	
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		KIM, H., "Leakage current and electrical breakdown in metal-organic chemical vapor deposited TiO ₂ dielectrics on silicon substrates", <u>Applied Phys. Lett.</u> , 69(25), (1996), pp. 3860-3862	
		KUBASCHEWSKI, O., et al., <u>Oxidation of Metals and Alloys</u> , Second Edition, Butterworths, London, (1962), pp. 1-3, 5.6, 8-12, 24, 36-39	

EXAMINER

DATE CONSIDERED

Substitute Disclosure Statement Form (PTO-1449)

^a EXAMINER's initial if reference considered, whether or not citation is in conformance with MPEP 603. Draw fact though citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (applicant's) Applicant is to place a check mark here if English language Translation is attached

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STATEMENT BY APPLICANT

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Complete if known Application Number Filing Date First Named Inventor Group Art Unit Examiner Name	09/945500
	August 30, 2001
	Forbes, Leonard
	2818
	Pham, Ly
Attorney Docket No: 1303.029US1	

Sheet 3 of 3

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.*	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T*
		KUKLI, K., "Development of Dielectric Properties of Niobium Oxide, Tantalum Oxide, and Aluminum Oxide Based Nanolayered Materials", <u>Journal of the Electrochemical Society</u> , 148(2), (2001), pp. F35-F41	
		KWO, J., "Properties of high k gate dielectrics Gd ₂ O ₃ and Y ₂ O ₃ for Si", <u>Journal of Applied Physics</u> , 89(7), (2001), pp. 3920-3927	
		MA, Y., "Zirconium Oxide Based Gate Dielectrics with equivalents Oxide Thickness of Less Than 1.0 nm and Performance of Submicron MOSFET using a Nitride Gate Replacement Process", <u>IEDM - Technical Digest</u> , (1999), pp. 149-152	
		MARSHALEK, R., et al., "Photoresponse Characteristics of Thin-Film Nickel-Nickel Oxide-Nickel Tunneling Junctions", <u>IEEE Journal of Quantum Electronics</u> , QE-19(4), (1983), pp. 749-754	
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		ROBERTSON, J., et al., "Schottky Barrier height of Tantalum oxide, barium strontium titanate, lead titanate, and strontium bismuth tantalate", <u>Applied Physics Letters</u> , vol. 74, no. 8, (02/22/1999), pp. 1168-1170	
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EXAMINER

DATE CONSIDERED

Substitute Disclosure Statement Form (PTO-1442)

* EXAMINER: Initial if reference considered, whether or not citation is in accordance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation document number (optional). Applicant is to place a check mark here if English language Translation is attached.

COPY

In re Patent Application of: Leonard Forbes
Title: PROGRAMMABLE MEMORY ADDRESS AND DECODE CIRCUITS WITH LOW
TUNNEL BARRIER INTERPOLY INSULATORS

RCE

Attorney Docket No.: 1303.029US1

Serial No.: 09/945500

Receipt is hereby acknowledged for the following in the United States Patent and Trademark
Office:

CONTENTS: REQUEST FOR CONTINUED EXAMINATION (RCE) Transmittal (1 pg);
Information Disclosure Statement (2 pages), Form 1449 (2 pages) and 38 Copies of cited documents;
Check in the amount of \$770.00 is attached to pay the RCE filing fee; Communication Concerning
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Mailed: March 11, 2004
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Docket No.: 1303.029US1
Due Date: March 12, 2004



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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Leonard Forbes	Examiner:	Ly D. Pham
Serial No.:	09/945500	Group Art Unit:	2818
Filed:	August 30, 2001	Docket:	1303.029US1
Title:	PROGRAMMABLE MEMORY ADDRESS AND DECODE CIRCUITS WITH LOW TUNNEL BARRIER INTERPOLY INSULATORS		

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq.*, the enclosed materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicant respectfully requests that this Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicant requests that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicant with the next official communication.

Pursuant to 37 C.F.R. §1.97(b), it is believed that no fee or statement is required with the Information Disclosure Statement. However, if an Office Action on the merits has been mailed, the Commissioner is hereby authorized to charge the required fees to Deposit Account No. 19-0743 in order to have this Information Disclosure Statement considered.

COPY

INFORMATION DISCLOSURE STATEMENT

Serial No :09/945500

Filing Date: August 30, 2001

Title: PROGRAMMABLE MEMORY ADDRESS AND DECODE CIRCUITS WITH LOW TUNNEL BARRIER INTERPOLY INSULATORS

Page 2

Dkt: 1303.029US1

The Examiner is invited to contact the Applicant's Representative at the below-listed telephone number if there are any questions regarding this communication.

Respectfully submitted,

LEONARD FORBES

By his Representatives,

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P.O. Box 2938
Minneapolis, MN 55402
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Date

11 March '04

By

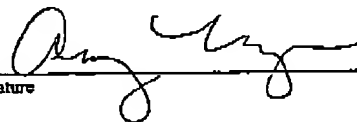
Timothy B Clise
Reg. No. 40,957

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 11th day of March, 2004.

Name

Amy Moriarty

Signature



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PTO/SB/CAM(10-01)

Approved for use through 10/31/2002. OMB #310001

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**Substitute for form 1449A/PTO
INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Use as many sheets as necessary)

Complete if Known	
Applicant Number	09/945500
Filing Date	August 30, 2001
First Named Inventor	Forbes, Leonard
Group Art Unit	2818
Examiner Name	Pham, Ly
Attorney Docket No: 1303.029US1	

Sheet 1 of 2

US PATENT DOCUMENTS

Examiner Initial *	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	Filing Date If Appropriate
	US-2003/0042527	03/06/2003	Forbes, Leonard, et al.	257	315	08/30/2001
	US-2003/0042532	03/06/2003	Forbes, Leonard	257	316	08/30/2001
	US-2003/0043622	03/06/2003	Forbes, Leonard	365	185.05	08/30/2001
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EXAMINER**DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 608. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional) is to be placed in box here if English language translation is attached.

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INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Complete if Known

Application Number	09/945500
Filing Date	August 30, 2001
First Named Inventor	Forbes, Leonard
Group Art Unit	2818
Examiner Name	Pham, Ly

Attorney Docket No: 1303.029US1

Sheet 2 of 2

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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Foreign Document No.	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	T ²
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OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ³
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EXAMINER

DATE CONSIDERED

Substitute Disclosure Statement Form (PTO-1449)

* EXAMINER: Initial if reference considered, whether or not decision is in conformance with MPEP 606. Draw the thorough citation if not in conformance and not considered. Attach copy of this form with next communication to applicant. Applicant's unique citation designation number (optional). Applicant is to place a check mark here if English language Translation is attached.